

Work Order ID 52218

Monday, September 21, 2009 7:52:31 AM



Page 1

Item ID:	D212-664-201	Accept		Setup	Start	
Revision ID:	C				Stop	
Item Name:	Crosstube Aft					
Start Date:	9/21/2009	Start Qty:	1.00		Cust Item ID:	
Required Date:	10/9/2009	Req'd Qty:	1.00		Customer:	
Reference:						

Approvals:	Process Plan:	<i>BL</i>	<i>mk</i>	Date:	09-9-21	Tooling:		Date:		Run	Start	
	QC:			Date:		SPC (Y/N):		Date:			Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D212-664-241	Rev C								

100		0.00							
	DOCUMENT CONTROL								
DC	Memo	0.00							
Document Control	Photocopy bluefile and create labels as per PPP D212-664-201		CHG003	<i>Sortaloy</i>					<i>HJ for BG 09/11/04</i>

110	Pick Kit	0.00							
	Packaging								
Packaging	Memo	0.00							<i>9/11/4 SP</i>
Packaging									

120		0.00							
	BENDING MACHINE - CROSSTUBES								
CNC Bend 2	Memo	0.00							
CNC Alpha 160 Bender	Bend tube as per Dwg D212-664-241 using CNC bender program 212-af and Folio FT007								<i>(ix) Q MB 09-10-20</i>

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Item ID: D212-664-201

Revision ID: C

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Start Date: 9/21/2009 Start Qty: 1.00

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Reference:

Accept



Setup Start



Stop



Cust Item ID:

Customer:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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130



QC

Quality Control

QC15- Crosstube Dimensional Check

0.00

27 801/01/20

0.00

(20)

/5

Memo

140



Crosstubes

Crosstubes

Crosstubes

0.00

0.00

(1X)

2

NB 09-10-21

Memo

1-Drill pilot holes in tube as per Dwg D212-664-241 using drill Jig DT8550 & DT8551

2-Ream hole to finish size in tube as per Dwg D212-664-241 using drill Jig DT8550 & DT8551. Check dimensions between holes, both sides on both cuffs, to ensure alignment with saddle holes.

3-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D212-664-241

4-Scribe part # and batch # using vibrating stylus as per Dwg D212-664-241

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Reference:

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Setup Start

Stop

Cust Item ID:

Customer:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

150

Crosstubes Chemical Conversion

0.00

HandFXtube

Memo

0.00

Hand Finishing Crosstubes

Chemical Conversion Coat as within 24 hours of bending and drilling

(14)

2

MB 09-10-21

160

QC3- Inspect Part Finish

0.00

QC

Memo

0.00

Quality Control

2) 8/10/2009

(20)

f

170

QC5- Inspect part completeness to step on W/O

0.00

QC

Memo

0.00

Quality Control

2) 8/10/2009

(20)

f

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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

180

Outsource process - NDT per QSI038 4.1

0.00



Outsource2

Memo

0.00

Outsource process - NDT

Liquid Penetrant Inspection as per QSI 038
Issue P/O: *10055*
LPI as per ASTM 1417 Level 2
Attach copy of NDT results to work order

Pl 09-10-28

190

Receive & Inspect for Damage & Mat'l Certs

0.00



Packaging

Packaging

Memo

0.00

Packaging

Ensure copy of NDT results attached to work order.

Pl 9/20/28

200

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

Inspect for damage & ensure results are as per Dwg D212-664-241

Pl 10 29

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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

210

Spray Painting per QSI005 4.2

0.00



SprayPaint

SprayPaint

Memo

0.00

Spray Painting

1-Prime inside and outside crosstube as per QSI 005 4.2
2-Paint outside crosstube with White Imron as per QSI 005 4.2

PRIME:

Start Time: 6:00

Finish Time: 7:30

PAINT:

Start Time: 8:00

Finish Time: 12:50

RT 09-20-02

220

QC14- Inspect Spray Paint

0.00



QC

Memo

0.00

Quality Control

Then, Wrap in plastic bag to protect from scratches

mm 09, 11, 02 ①

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Required Date:	10/9/2009	Req'd Qty:	1.00		Customer:	
Reference:						

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	
	QC:	Date:	SPC (Y/N):	Date:		Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230 Crosstubes	Crosstubes	0.00				<u>ml</u>	<u>09</u>	<u>11</u>	<u>03</u> ①
Crosstubes	Memo	0.00							
	1- Lightly scuff the bonded area using a 320 grit sand paper and clean the area with 41058 wash 'n' wipe								
	2-Install supports with magnobond as per QSI 015 Adhere for for 12 Hrs								
	A/R 6398 Magnobond Batch: <u>112417</u>								
	Expiry Date: <u>01/20/11</u>								
	3-Install clamps as per Dwg D212-664-241. Torque clamps to 80-100 in lb. <u>RT</u> <u>09-11-04</u>								
240 QC	QC5- Inspect part completeness to step on W/O	0.00				<u>⑩</u>	<u>1</u>		
Quality Control	Memo	0.00							

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Item ID: D212-664-201

Accept



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Revision ID: C

Stop



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Cust Item ID:

Required Date: 10/9/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
250 Packaging Packaging	Pick Kit Memo	0.00 0.00							
260 QC Quality Control	QC4- 100% Inspect kits for completeness Memo	0.00 0.00							
270 Packaging Packaging	Packaging Memo Identify and pack for shipping as per PPP D212-664-201	0.00 0.00							

9/11/4 SP

809/1/04

(4)

9/11/5 SP

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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

280

QC21- Final Inspection - Work Order Release

0.00

QC

Memo

0.00

Quality Control

09/11/05

P/09-11-5

Picklist Print

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Page 1

Work Order ID: 52218



Parent Item: D212-664-201RevC



Parent Item Name: Crosstube Aft

Start Date: 9/21/2009

Required Date: 10/9/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
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D212-664-
201TRNRevC

Manufactured No

110

Each

3.0000

1.0000



Crosstube Turning Detail



B-52740 MB 09-20-2009 ✓
~~B-52738~~ MB ~~09-10-10~~

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

FG

3

46386

1

50991

1

51220

1

D3595-063-530RevA

Manufactured No

230

Each

208.0000

2.0000



RUBBER CUSHION



Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

208

40780

2

44998

2

50030

100

51776

104

m/ 09 11 03

Picklist Print

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Work Order ID: 52218



Parent Item: D212-664-201RevC



Parent Item Name: Crosstube Aft



Start Date: 9/21/2009

Required Date: 10/9/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D2940-1RevB		Manufactured	No			230	Each	44.0000	2.0000			
												
Support												

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

<u>Location</u>

Main Warehouse

ST

44

24367

4

25594

2

45203

18

47748

20

ml 09 11 03

MS21920-28



Purchased

No

230

Each

136.0000

4.0000



Clamp(per MIL-DTL-8783C)

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

<u>Location</u>

OFFSHORE

FG

5

105884

5

Main Warehouse

ST

131

106864

5

108466

9

108847

7

109181

14

109965

2

111281

2

111734

42

112624

50

ml 09 11 03

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Shop Packet Print

Page 2

Picklist Print

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Parent Item Name: Crosstube Aft

Start Date: 9/21/2009

Required Date: 10/9/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	--------------------------	---------------	----------------	--------

5

D3428-1RevA

Manufactured

No

250

Each

31.0000

1.0000



Placard

9/21/21 54

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST096

31

50790

31

1 x 54

5

MS21042L6

Purchased

No

250

Each

721.0000

6.0000



Nut

9/21/21 54

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

721

105077

22

110002

5

111548

94

111578

400

112492

200

6 x 54

Picklist Print

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Required Date: 10/9/2009

Comments:

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Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	--------------------------	---------------	----------------	--------

AN960JD616

Purchased

No

250

Each

712.0000

18.0000



Washer



9144 SP

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

712

107242

3

107959

6

109371

8

110704

23

111193

10

111607

4

112314

658

18x SP

AN6-40A

Purchased

No

250

Each

74.0000

4.0000



Bolt



9144 SP

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

74

112314

4

112612

20

112679

50

3x SP
1x

Picklist Print

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Parent Item Name: Crosstube Aft

Start Date: 9/21/2009

Required Date: 10/9/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	--------------------------	---------------	----------------	--------

AN6-41A

Purchased

No

250

Each

53.0000

2.0000



Bolt

9/21/09 SP

Ⓜ

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

53

111605

33

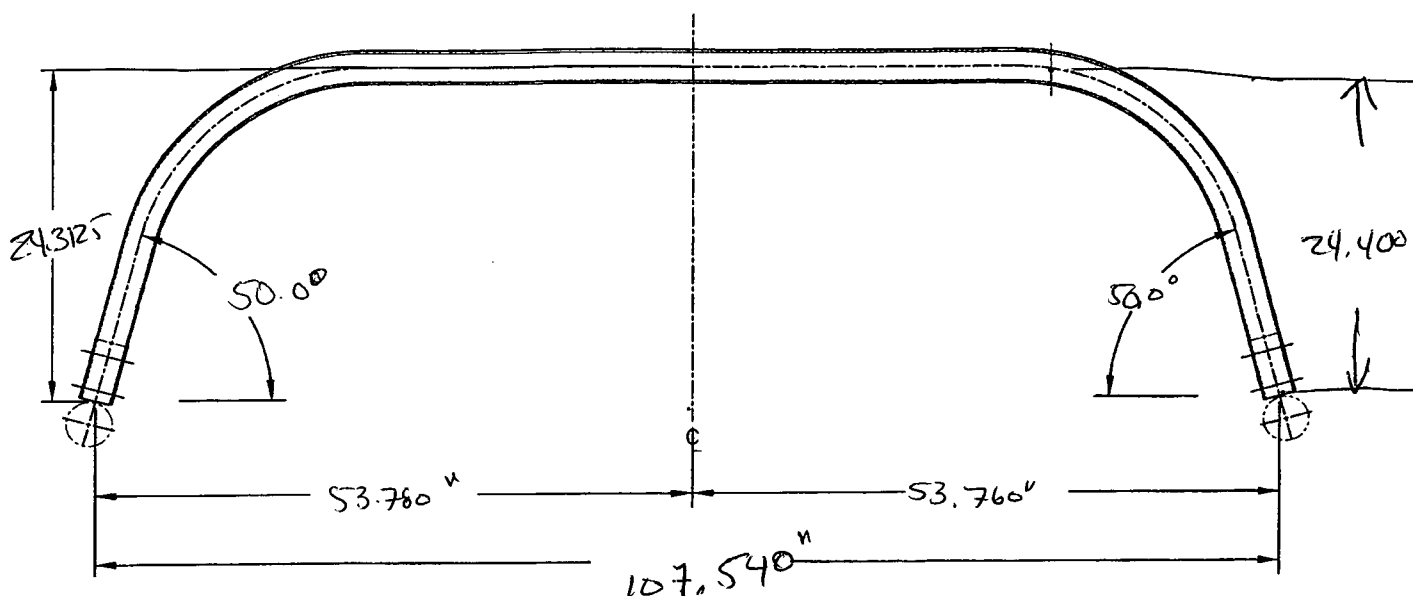
112489

20

2x SP

DART AEROSPACE LTD		Work Order:	52218
Description: Crosstube High Aft (205/212)		Part Number:	D212-664-201
Inspection Dwg: D212-664-241 Rev: C		Page 1 of 1	

Required Dimension	Min	Max
Height	24.17	24.43
1/2 Span	53.59	53.85
Angle	49	52
Total Span	107.18	107.70



Comments
* tube is slightly off on height but within tol.

QC15 Inspection	S
Date	09/10/20

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	07.05.08	Dimensions updated per Dwg rev. C	KJ/JLM	

DART**RELEASED**
07.04.24
PER ECN 089**DEO ATTACHED**

DESIGN <i>PH</i>	DRAWN BY <i>PH</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>J</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D212-664-241	REV. C SHEET 1 OF 3
DATE 07.03.08		TITLE CROSSTUBE ASS'Y (205/212 HI AFT)	SCALE NTS
A	00.12.12	NEW ISSUE	
B	05.02.04	ADD HOLES FOR COMPATABILITY WITH BHT/AA SKIDTUBES	
C	07.03.08	REMOVE -1009 ABRASION STRIP; ADD MAGNOBOND 6398, CUSHION, REVERSE CLAMPS	

Qty	Part Number	Description
X	D212-664-241	CROSSTUBE ASSEMBLY (205/212 HIGH AFT)
1	D6006-129	CROSSTUBE
2	D2940-1	SUPPORT
4	D3595-063-530	RUBBER CUSHION
4	MS21920-28	CLAMP (OR MS21920-30)
A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) MATERIAL: MANUFACTURED FROM D6006-129
FINISHED LENGTH = 124.36±0.020
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 4) PART IS SYMMETRIC ABOUT CENTERLINE
- 5) RUN-OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 6) BEND PROGRESSIVELY WITH A MINIMUM OF 5 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 7) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 8) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS.
- 9) INSTALL D2940-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 10) INSTALL MS21920-28 CLAMPS WITH D3595-063-530 RUBBER CUSHIONS TO SECURE D2940-1 SUPPORT ON TOP SIDE OF CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE OF CROSSTUBE SUPPORT
NOTE: MS21920-30 CLAMPS CAN BE USED TO ACCOMMODATE VARYING DIAMETERS. ENSURE THERE IS A MINIMUM OF 1.5 THREADS IN SAFETY ON THE NUTS.
- 11) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 12) TORQUE CLAMPS 80 TO 100 IN-LB.

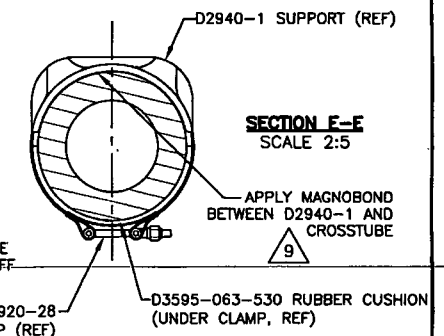
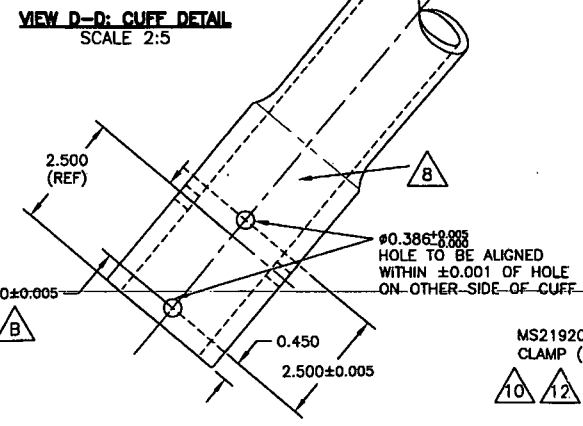
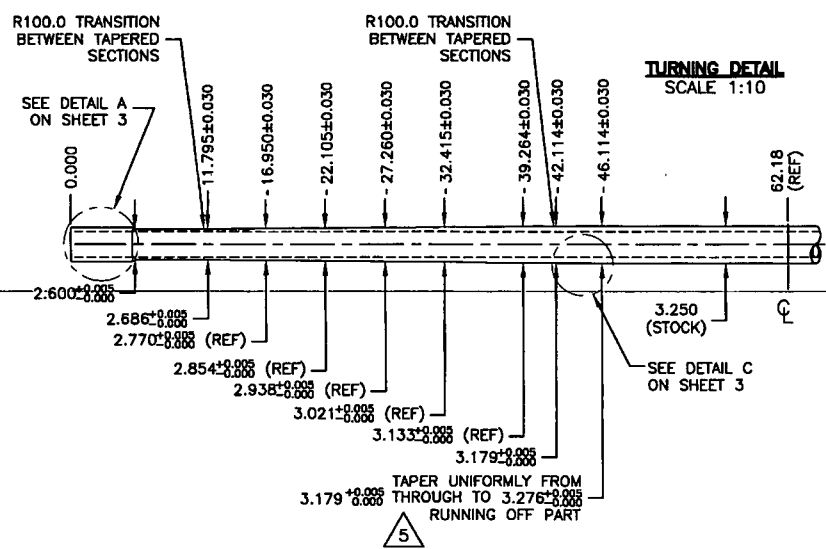
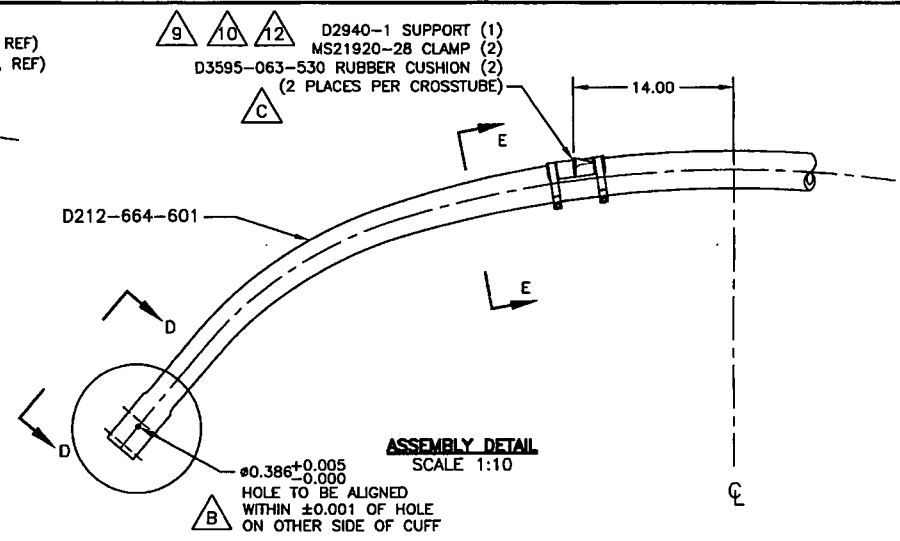
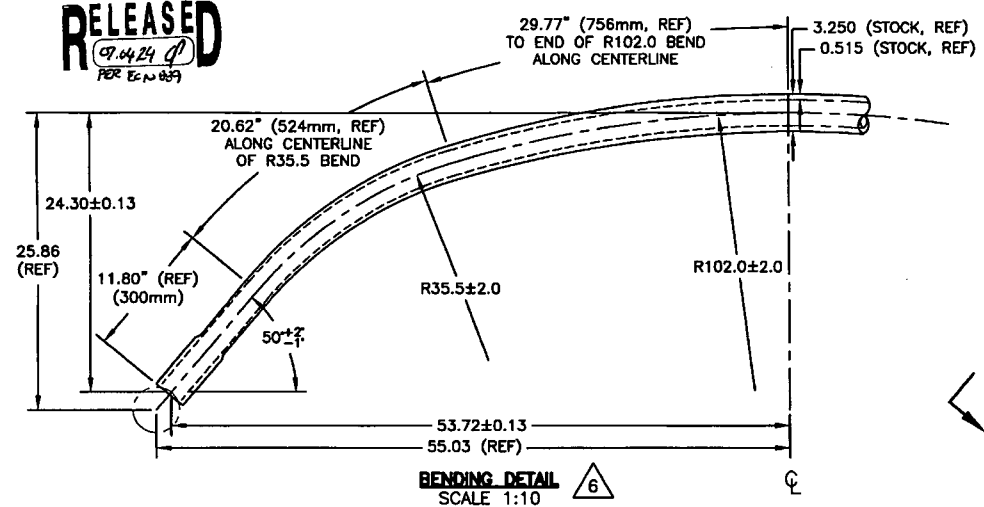
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 52218

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W/O 52218

RELEASED
09.04.24
PER E.C.N. 037



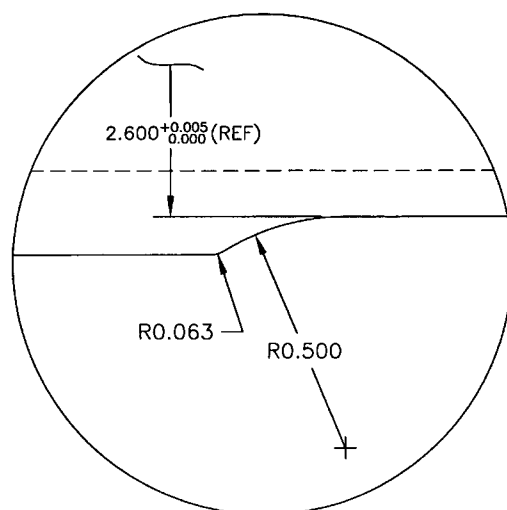
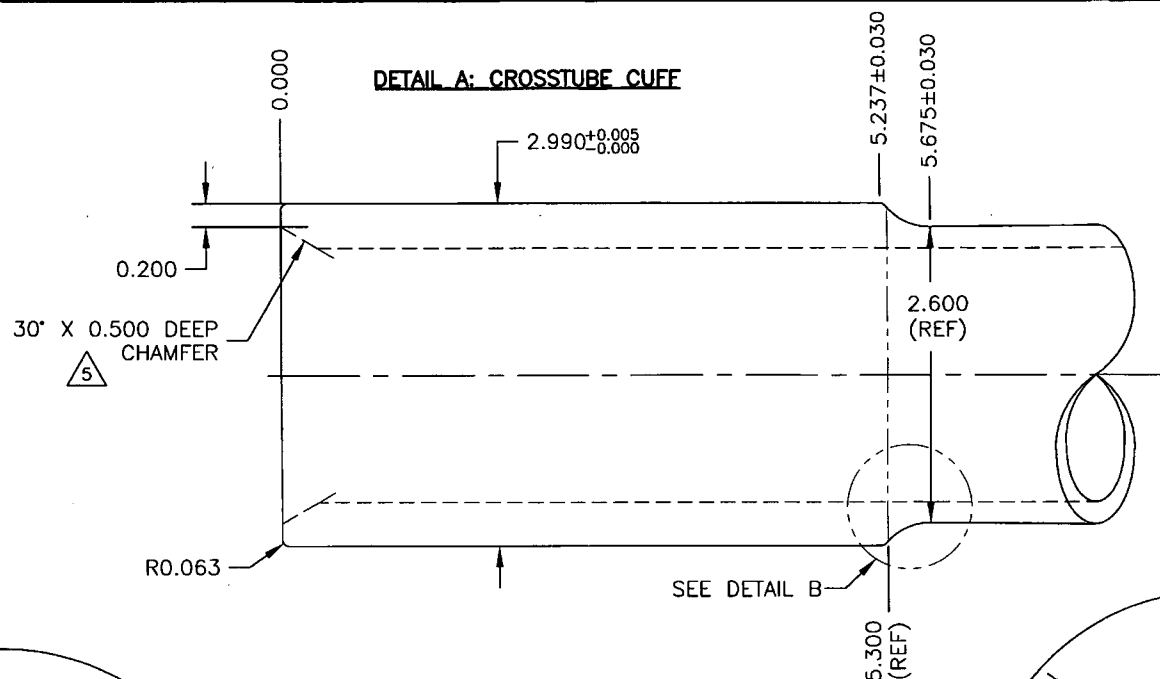
DEO ATTACHED

COPYRIGHT © 2000 BY DART AEROSPACE LTD.		DESIGN	PH	DRAWN BY	PH	DART	DART AEROSPACE LTD. WARRIMUR, ONTARIO, CANADA
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.		CHECKED	1	APPROVED	[Signature]	DRAWING NO. D212-664-241	REV. C SHEET 2 OF 3
		DATE	07.03.08	TITLE		CROSSTUBE ASS'Y (205/212 HI AFT) 1:10	

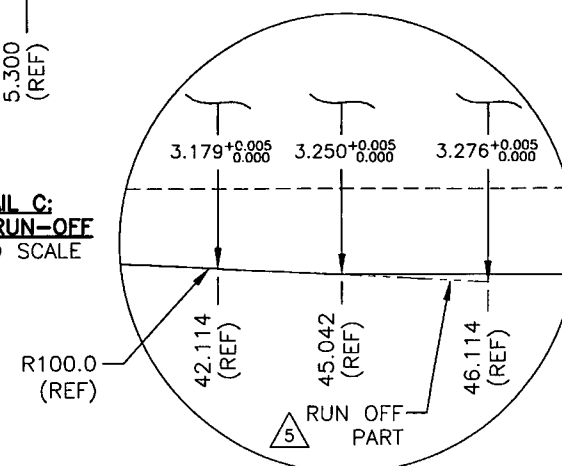
W10 52218

RELEASED
07.04.24
PER ECN 869

DEO ATTACHED



DETAIL C: TAPER RUN-OFF
NOT TO SCALE



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DESIGN RH	DRAWN BY RH	DART DART AEROSPACE LTD. HAWKESBURY, ONTARIO, CANADA	REV. C
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. D212-664-241	SHEET 3 OF 3
DATE 07.03.08	TITLE CROSSTUBE ASS'Y (205/212 HI AFT)	SCALE 1:1	

W/0 52218

DRAWING NO. D212-664-241	TITLE CROSSTUBE	REV. C	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D212-664-241-C-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN UP	CHECKED Rt	MFG. APPR. E	APPROVED MD		DE APPR. H		
DATE 09.05.01	DATE 09.06.15	DATE 09.06.15	DATE 09/06/16		DATE 09/06/16		

CHANGE:

ADD THE FOLLOWING CROSSTUBE ASSEMBLY:

Part Number	Description
D212-664-241B	CROSSTUBE ASSEMBLY (214 HIGH AFT)

THE D212-664-241B CROSSTUBE HAS THE SAME PARTS LIST AS THE D212-664-241 CROSSTUBE. HOWEVER, INSTALL THE SUPPORTS AS SHOWN IN FIGURE 1 OF THIS ENGINEERING ORDER. THE NEW KIT IS OTHERWISE ASSEMBLED PER THE D212-664-241 CROSSTUBE.

RELEASED
09/06/22 JH

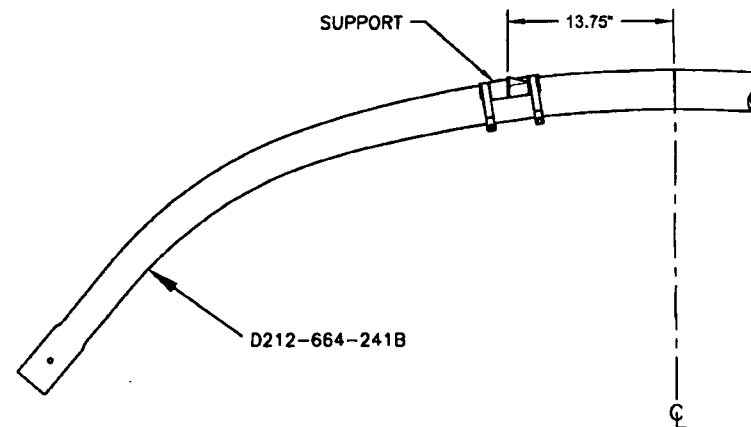


FIGURE 1 - SUPPORT INSTALLATION

REFERENCE ONLY

5.0 PARTS LIST

5.1 HIGH GEAR CROSSTUBES

Item	-101	-201	-203	Part Number	Description
	X			D212-664-101	CROSSTUBE INSTALLATION, 204/205/210/212/214/412, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K HIGH FWD
		X		D212-664-201	CROSSTUBE INSTALLATION, 204/205/210/212/214, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K HIGH AFT
			X	D412-664-203	CROSSTUBE INSTALLATION, 412 HIGH AFT
1	1			D212-664-141	CROSSTUBE ASSEMBLY, 204/205/210/212/214/412, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K HIGH FWD
2		1		D212-664-241	CROSSTUBE ASSEMBLY, 204/205/210/212/214, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K HIGH AFT
3			1	D412-664-243	CROSSTUBE ASSEMBLY, 412 HIGH AFT
10	2			* D2893-1	SUPPORT
11	4			* D3595-063-450	RUBBER CUSHION
12	4			* MS21920-25	CLAMP (OR MS21042-26)
13	4			AN6-35A	BOLT
14	4			AN6-36A	BOLT
15	6			MS21042L6	NUT (OR MS21042-6)
16	18			AN960JD616	WASHER
20		2		* D2940-1	SUPPORT
21		4		* D3595-063-530	RUBBER CUSHION
22		4		* MS21920-28	CLAMP (OR MS21042-30)
23		4		AN6-40A	BOLT
24		2		AN6-41A	BOLT
25		6		MS21042L6	NUT (OR MS21042-6)
26		18		AN960JD616	WASHER
30			1	* D2896-1	SUPPORT
31			2	* D2856-600-1009	ABRASION STRIP
32			2	* D3595-063-570	RUBBER CUSHION
33			4	* MS21920-28	CLAMP
34			2	* MS21920-30	CLAMP (OR MS21042-32)
35			4	AN6-40A	BOLT
36			2	AN6-41A	BOLT
37			6	MS21042L6	NUT (OR MS21042-6)
38			18	AN960JD616	WASHER
39			2	* D3189-1	CHAFING SHIELD
50	1	1		D3428-1	PLACARD

*REFERENCE ONLY. PARTS ARE INCLUDED IN D212-664-141/-241 OR D412-664-243 ASSEMBLIES ABOVE
NOTE: KITS INCLUDE EXTRA HARDWARE FOR COMPATIBILITY WITH BOTH DART AND BELL/AA
SKIDTUBES.

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Revision: F

Date: 08.09.05

52218



LIQUID PENETRANT TEST REPORT

P- 15030

PAGE 1 OF 1

ION Dart Aerospace DATE Oct 28th 09 TIME AM ☐ PM ☐
SS Linda Lacelle ACUREN JOB NO. 188-09-1626
1270 Aberdeen St. PO/VO No. 10655
Hawkesbury WORK LOCATION Hawkesbury
ACCEPTANCE STD. ASTM 1417/031-038 REV./DATE 2005
IT X-Tubes D212-664-201, D212-664-107, D212-664-101 - D206-667-103
EXAMINED Sob #'s 51068, 51069, 52218, 52454, 52455, 52456, 52539, 52540

DESCRIPTION PROCEDURE No. LT-0000 REV./DATE TECHNIQUE No. LT-TEC# 02 REV./DATE
O. D212-664-201, D212-664-107, D212-664-101 MATERIAL AL309 ALUM. THICKNESS
WET FLOURESCENT LIQUID PENETRANT INSPECTION CARRIED OUT
ON 100% EXTERNAL SURFACE

DETAILS
☒ FLUORESCENT ☐ VISIBLE ☒ WATER WASH ☐ SOLVENT REMOVABLE ☐ POST EMULSIFIED
BRAND MAGNAFLUX BLACK LIGHT S/N 8178 ☒ OUTPUT > 1000 μ W/cm² ☐ AMBIENT < 2 fc
DYE ZL67 MINIMUM DWELL TIME 45 MIN. LIGHTING EQUIP. ☒ FLASHLIGHT ☐ TROUBLELIGHT ☐ OUTPUT > 100 fc @ SURFACE
DYE REMOVER H₂O MINIMUM DRY TIME >10 MIN. OTHER CAL JUNE 09
DYE PER SK052 MINIMUM DWELL TIME 10 MIN. LIGHT METER S/N CAL DUE DATE DEC 09
DYE PER TYPE ☒ NON AQUEOUS ☐ AQUEOUS ☐ DRY

SURFACE
PRE CONDITION ☐ AS GROUND ☐ AS WELDED ☒ MACHINED ☐ SHOT BLASTED ☒ CLEAN BARE METAL
PRE TEMPERATURE ☐ < -4°C/ 20°F ☐ -4°C/ 20°F TO 10°C/ 50°F ☒ 10°C/ 50°F TO 52°C/ 125°F ☐ > 52°C/ 125°F
TS- ☐ METRIC ☐ IMPERIAL

WET FLOURESCENT LIQUID
PENETRANT INSPECTION
CARRIED OUT ON 100%
EXTERNAL SURFACE ON X-TUBES
52540: ACCEPTABLE
Sob #'s 51068: ACCEPTABLE
51069: ACCEPTABLE
52218: ACCEPTABLE
52454: ACCEPTABLE
52455: ACCEPTABLE
52456: ACCEPTABLE
52539: ACCEPTABLE

MA 09 10 29

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of Care
ing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied or intended by Acuren Group Inc.

TURES
REPRESENTATIVE Chantal Lacelle Chantal Lacelle DTR # E-27155
CIAN (SIGNATURE): FREDERICK CHAGNON REPORT
(PRINT): FREDERICK CHAGNON REVIEWED BY:
1st TECHNICIAN 2nd TECHNICIAN
CGSB LEVEL II SNT LEVEL II CGSB LEVEL _____ SNT LEVEL _____
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PT Sept 2005